Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application.

Listing of Claims

1. (currently amended) An ancient defense polymer having selective antimicrobial activity, and [[said polymer]] comprising:

A) one or more discrete hydrophobic segments, wherein said hydrophobic segment comprises:

A1. polymerized hydrophobic chain growth monomers;

A2. polymerized step-growth monomers; or

A3. hydrophobic (di)functional oligomers or polymers; and

B) ~~and~~ one or more hydrophilic segments containing cationic functionality wherein said hydrophilic segment comprises:

B1. polymerized cationic chain growth monomers;

B2. a polymer made from a mixture of cationic chain growth monomers and (i) uncharged monomers that are hydrophilic or (ii) hydrophobic monomers; or

B3. cationic (di)functional oligomers or polymers;

wherein the ancient defense polymer has a grafted chain architecture, comprising a main chain and chains grafted onto the main chain.

2. (cancelled)

3. (cancelled)

4. (previously presented) The ancient defense polymer of claim 1, wherein said hydrophobic segment comprises polymerized hydrophobic alkyl methacrylates, aryl methacrylates, alkyl methacrylamides, or aryl methacrylamides.

5. (previously presented) The ancient defense polymer of claim 1, wherein said hydrophilic segment comprises polymerized methacrylates and/or methacrylamides.

6. (previously presented) The ancient defense polymer according to claim 1 comprising a copolymer of 3-aminopropyl methacrylamide (AMA,) and poly(propylene oxide)monomethacrylate (PPO-ME).

7. (previously presented) The ancient defense polymer according to claim 6 wherein AMA is present in an amount of from 5 to 50 mol%.

8. (previously presented) The ancient defense polymer according to claim 6, wherein AMA is present in an amount of about 10 mol%.

9. (original) The ancient defense polymer according to claim 1, comprising a terpolymer of 3-aminopropyl methacrylamide (AMA), poly(propylene oxide)monomethacrylate (PPO-ME), and methyl methacrylate.

10. (original) The ancient defense polymer according to claim 1, comprising a terpolymer of 3-aminopropyl methacrylamide (AMA), poly(propylene oxide)monomethacrylate (PPO-ME), and n-butyl methacrylate (BMA).

11. (cancelled)

12. (currently amended) The ancient defense polymer of claim 1 [[11]], wherein the main chain contains hydrophilic segments and the graft chains [[grafts]] contain the hydrophobic segments.

13. (currently amended) The ancient defense polymer of claim 1, wherein the hydrophilic and/or the hydrophobic segments are grafted [[attached]] either directly or indirectly to the main chain, and the main chain is a derivatizable polymer.

14. (currently amended) The ancient defense polymer according to claim 13, wherein at least one of said hydrophobic segments or said hydrophilic segments is grafted [[attached]] to the derivatizable polymer by a spacer group.

15. (currently amended) The ancient defense polymer according to claim 13, wherein said hydrophobic segment and said hydrophilic segment are grafted [[attached]] to the derivatizable polymer by a spacer group.

16. (cancelled)

17. (original) The ancient defense polymer according to claim 13, wherein said hydrophobic segment is grafted onto said hydrophilic segment.

18. (previously presented) The ancient defense polymer of claim 13, wherein the derivatizable polymer comprises polymerized chain growth monomers containing reactive functional groups.

19. (currently amended) The ancient defense polymer of claim 18, wherein said functional groups are one or more of the groups selected from the group consisting of hydroxyl, carboxylic acid, amine, vinyl, acid chloride, and isocyanate.

20. (currently amended) An apparatus comprising an [[the]] ancient defense polymer having selective antimicrobial activity and comprising:

A) one or more discrete hydrophobic segments, wherein said hydrophobic segment comprises:

A1. polymerized hydrophobic chain growth monomers;

A2. polymerized step-growth monomers; or

A3. hydrophobic (di)functional oligomers or polymers; and

B) one or more hydrophilic segments containing cationic functionality wherein said hydrophilic segment comprises:

B1. polymerized cationic chain growth monomers;

B2. a polymer made from a mixture of cationic chain growth monomers and (i) uncharged monomers that are hydrophilic or (ii) hydrophobic monomers; or

B3. cationic (di)functional oligomers or polymers;

wherein said ancient defense polymer is [[of claim 1]] bound in or attached to a surface of said apparatus to impart antimicrobial activity to said apparatus.

21. (previously presented) The apparatus of claim 20, wherein said apparatus is selected from the group consisting of an implant, a catheter, a replacement valve, a wound dressing, a medical device, and a stent.

22. (previously presented) The ancient defense polymer of claim 10, made from 1-15 mol% BMA, 5-49 mol% AMA, and 50-90 mol% PPO-Me.

23. (new) The apparatus of claim 21, wherein the ancient defense polymer has a grafted chain architecture, comprising a main chain and chains grafted onto the main chain.

24. (new) An apparatus consisting of, or having a portion consisting of, an ancient defense polymer having selective antimicrobial activity and comprising:

A) one or more discrete hydrophobic segments, wherein said hydrophobic segment comprises:

A1. polymerized hydrophobic chain growth monomers;

A2. polymerized step-growth monomers; or

A3. hydrophobic (di)functional oligomers or polymers; and

B) one or more hydrophilic segments containing cationic functionality wherein said hydrophilic segment comprises:

B1. polymerized cationic chain growth monomers;

B2. a polymer made from a mixture of cationic chain growth monomers and (i) uncharged monomers that are hydrophilic or (ii) hydrophobic monomers; or

B3. cationic (di)functional oligomers or polymers;

wherein said ancient defense polymer imparts antimicrobial activity to said apparatus.

25. (new) The apparatus of claim 24, selected from the group consisting of surgical devices, sterile draping and dressings, clothing, food packaging, agricultural processing and bioreactor parts.

26. (new) The apparatus of claim 25, wherein the ancient defense polymer has a grafted chain architecture, comprising a main chain and chains grafted onto the main chain.

27. (new) A method of inhibiting bacterial growth induced by contacting a patient with a medical apparatus, the method comprising contacting the patient with the apparatus of claim 20.

28. (new) The method of claim 27, wherein the method results in prevention and/or disruption of bacterial biofilm formation on the apparatus.

29. (new) A method of inhibiting bacterial growth induced by contacting a patient with a medical apparatus, the method comprising contacting the patient with the apparatus of claim 24.

30. (new) The method of claim 29, wherein the method results in prevention and/or disruption of bacterial biofilm formation on the apparatus.